Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Calcasieu Refining Company
Lake Charles Crude Oil Refinery
Lake Charles, Calcasieu Parish, Louisiana
Agency Interest Number: 3585
Activity Number: PER20060006
Proposed Permit Number: 0520-00050-V6

I. APPLICANT

Company:
Calcasieu Refining Company
4359 W Tank Farm Rd
Lake Charles, Louisiana 70605

Facility:
Calcasieu Refining Company – Lake Charles Crude Oil Refinery
4359 W Tank Farm Rd
Lake Charles, Calcasieu Parish, Louisiana
Approximate UTM coordinates: 468.9 km East, 3,333.5 km North in Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Currently, this petroleum refinery facility consists of two Atmospheric Distillation Units (ADUs) and associated process equipment, a storage terminal, product loading operations, and support utility systems (e.g., boilers and wastewater treatment). The ADUs separate crude oil into various petroleum fractions, including liquefied petroleum gas (LPG), naphtha, kerosene, diesel, mineral spirits, gas oil, and reduced crude. These refined petroleum products are sold and transported offsite by barge, product pipeline, and tanker truck.

Calcasieu Refining Co - Lake Charles Crude Oil Refinery is a designated Part 70 source. Currently, the entire facility is operating under the Part 70 Permit No. 0520-00050-V5, issued January 25, 2007.

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III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire, dated December 14, 2006, were submitted by Calcasieu Refining Company requesting a Part 70 operating permit modification. Additional information dated January 4, 2007 was also received.

Project

CRC proposed to add a Vacuum Tower Unit to refine and control products from a low-grade quality crude supply. The addition of the Vacuum Tower Unit will allow recovery of the gas-oil and diesel to high-value products from low-value residual material. The remaining residual material can be sold as a 6-oil product or coker feed. The capacity of the refinery will be increased from 80,000 barrels per stream day (BPSD) to 96,000 BPSD due to this project.

The resid product from the current crude units will be pumped directly to the vacuum unit from the crude tower bottoms. Once combined, the vacuum unit feed will be routed through a charge furnace. The furnace will vaporize the majority of the resid. The furnace outlet will enter the vacuum tower, which will be operated under deep vacuum to maximize the amount of vaporization. In the tower, the vaporized material will be condensed and removed from the tower in three draw offs – the Slop Wax, Heavy Vacuum Gas Oil (HVGO), and Diesel. The Slop Wax will be recycled back to the furnace, and the HVGO and Diesel will be taken as products. The material not vaporized will be drawn off as vacuum tower bottoms (VTB) and mixed with diesel to meet 6-oil or coker feed specifications.

The Vacuum Tower Unit project has been approved under Permit No. 0520-00050-V5. This permit modification will add a reboiler for the Vacuum Tower Unit.

Proposed Permit

This permit (No. 0520-00050-V6) will be a permit modification of Part 70 Operating Permit No. 0520-00050-V5 for the Calcasieu Refining Company's Lake Charles Crude Oil Refinery.

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Permitted Air Emissions

Estimated emissions from the facility in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	14.50	17.25	+ 2.75
SO_2	33.41	40.63	+ 7.22
NO_X	86.33	109.09	+ 22.76
CO	114.34	122.65	+ 8.31
VOC	131.67	133.66	+ 1.99

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Prevention of Significant Deterioration/Nonattainment Review

The emission increases due to the Vacuum Tower Unit project are (in tons per year):

PM_{10}	SO_2	NO_X	CO	VOC
3.19	9.51	25.94	9.40	34.33

The above table indicates that emission increases of PM_{10}, SO_2, NO_X, CO, and VOC are not over the PSD significance levels. Therefore, PSD review on the Vacuum Tower Unit project is not required.

MACT Requirements

The Lake Charles Crude Oil Refinery is a minor source of TAP/HAP. MACT is not required for this facility.

Air Quality Analysis

Since the emission increases due to the project are not significant, air quality analysis is not required.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition

XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

No permit shield is requested.

VI. PERIODIC MONITORING

No additional periodic monitoring is required.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥10 tons per year of any toxic air pollutant; ≥25 tons of total toxic air pollutants; and ≥100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.